

1

DATE	TIME	LAT	LONG
OCT 3	1200	21° 10' N	158° 00' W
"	1300	20° 55' N	158° 00' W
"	1400	20° 42' N	158° 04' W
"	1500	20° 29' N	158° 09' W
"	1600	20° 16' N	158° 02' W
"	1700	20° 05' N	158° 07' W
"	1800	19° 45' N	158° 25' W
"	1900	19° 37' N	158° 35' W
"	2000	19° 29' N	158° 43' W
"	2100	19° 20' N	158° 53' W
"	2200	19° 10' N	159° 02' W
"	2300	19° 00' N	159° 12' W
4 OCT	0000	18° 51' N	159° 22' W
"	0100	18° 41' N	159° 31' W
"	0200	18° 32' N	159° 40' W
"	0300	18° 21' N	159° 50' W
"	0400	18° 12' N	160° 00' W
"	0500	18° 02' N	160° 09' W
"	0600	17° 53' N	160° 19' W
"	0700	17° 43' N	160° 29' W
"	0800	17° 31' N	160° 34' W
"	0900	17° 22' N	160° 42' W
"	1000	17° 13' N	160° 53' W
"	1100	17° 04' N	161° 04' W
"	1200	16° 54' N	161° 11' W
"	1300	16° 46' N	161° 24' W

2

DATE	TIME	LAT.	LONG.
4 OCT	1400	16° 35' N	161° 31' W
"	1500	16° 26' N	161° 42' W
"	1600	16° 16' N	161° 52' W
"	1700	16° 07' N	162° 02' W
"	1800	15° 56' N	162° 11' W
"	1900	15° 42' N	162° 29' W
"	2000	15° 33' N	162° 40' W
"	2100	15° 21' N	162° 47' W
"	2200	15° 14' N	162° 57' W
"	2300	15° 05' N	163° 06' W
5 OCT	0000	15° 00' N	163° 09' W
"	0100	14° 59' N	163° 14' W
"	0200	14° 49' N	163° 23' W
"	0300	14° 40' N	163° 31' W
"	0400	14° 32' N	163° 37 ⁴⁰ ' W
"	0500	14° 24' N	163° 47' W
"	0600	14° 16' N	163° 55' W
"	0700	14° 07' N	164° 04' W
"	0800	14° 00' N	164° 12' W
"	0900	13° 53' N	164° 15' W
"	1000	13° 46' N	164° 23' W
"	1100	13° 42' N	164° 31' W
"	1200	13° 27' N	164° 36' W
"	1300	13° 19' N	164° 45' W
"	1400	13° 11' N	164° 52' W
"	1500	13° 04' N	165° 02' W

3

DATE	TIME	LAT	LONG
5 OCT	1600	12° 55' N	165° 10' W
"	1700	12° 47' N	165° 18' W
"	1800	12° 39' N	165° 27' W
"	1900	12° 32' N	165° 34' W
"	2000	12° 27' N	165° 41' W
"	2100	12° 19' N	165° 49' W
"	2200	12° 11' N	165° 57' W
"	2300	12° 03' N	166° 05' W
	2400		
6 OCT	0000	11° 55' N	166° 18' W
"	0100	11° 49' N	166° 21' W
"	0200	11° 40' N	166° 28' W
"	0300	11° 32' N	166° 37' W
"	0400	11° 24' N	166° 44' W
"	0500	11° 15' N	166° 54' W
"	0600	11° 07' N	167° 03' W
"	0700	10° 59' N	167° 12' W
"	0800	10° 45' N	167° 25' W
"	0900	10° 36' N	167° 40' W
"	1000	10° 29' N	167° 48' W
"	1100	10° 19' N	167° 56' W
"	1200	10° 13' N	168° 03' W
"	1300	10° 02' N	168° 09' W
"	1400	9° 53' N	168° 11' W
"	1500	9° 45' N	168° 20' W
"	1600	9° 36' N	168° 27' W

4

DATE	TIME	LAT	LONG
6 OCT	1700	9°28'N	168°34'W
"	1800	9°19'N	168°42'W
"	1900	9°16'N	168°52'W
"	2000	9°07'N	169°01'W
"	2100	8°57'N	169°09'W
"	2200	8°49'N	169°16'W
"	2300	8°39'N	169°23'W
7 OCT	0000	8°30'N	169°31'W
"	0100	8°21'N	169°38'W
	0200	8°12'N	169°45'W
	0300	8°04'N	169°53'W
	0400	7°54'N	170°01'W
	0500	7°45'N	170°08'W
	0600	7°35'N	170°15'W
	0700	7°27'N	170°22'W
	0800	7°19'N	170°30'W
	0900	7°16'N	170°31'W
	1000	7°09'N	170° 40 40'W
	1100	7°00'N	170°47'W
	1200	6°51'N	170°55'W
	1300	6°43'N	171°03'W
	1400	6°34'N	171°11'W
	1500	6°26'N	171°18'W
	1600	6°18'N	171°27'W
	1700	6°09'N	171°35'W
	1800	6°00'N	171°44'W

7 OCT 63	1900	5° 52' N		171° 52' W	
	2000	5° 35' N	47	171° 41' W	
	2100	5° 29' N	40	171° 50' W	
	2200	5° 21' N	34	171° 57' W	
	2300	5° 13' N	28	172° 06' W	
8 OCT 63	0000	5° 04' N	22	172° 14' W	
	0100	4° 56' N	14	172° 23' W	
	0200	4° 48' N	06	172° 31' W	
	0300	4° 39' N	5° 00"	172° 40' W	
	0400	4° 31' N	4° 54"	172° 47' W	
	0500	4° 22' N	4° 46"	172° 56' W	
	0600	4° 14' N	4° 38"	173° 04' W	13° 02
	0700	4° 55' N	4° 30"	172° 37' W	10
	0800	4° 47' N	4° 24"	172° 45' W	18
	0900	4° 30' N	4° 18"	172° 53' W	26
	1000	4° 20' N	4° 12"	173° 05' W	34
	1100	4° 11' N	4° 04"	173° 14' W	42
	1200	4° 00' N	3° 58"	173° 24' W	50
	1300	3° 48' N	3° 50"	173° 38' W	73° 58
	1400	3° 38' N	3° 42"	173° 38' W	74° 04
	1500	3° 28' N	34	173° 48' W	12
	1600	3° 20' N	26	173° 58' W	20
	1700	3° 10' N	18	174° 08' W	28
	1800	3° 04' N	10	174° 17' W	36
	1900	3° 00' N	3° 02"	174° 16' W	44
	2000	2° 48' N	2° 56"	174° 33' W	74° 52

MAG - lat. & long.
corrections

8 OCT 63	2100	02° 29' N ⁴⁶	174° 33' W ^{75' 00}
	2200	2° 20' N ³⁰	174° 53' W ⁰⁸
	2300	2° 11' N ²⁶	175° 02' W ¹⁶
9 OCT 63	0000	2° 05' N ¹⁶	175° 12' W ²⁴
	0100	1° 55' N ²⁰⁶	175° 19' W ³²
	0200	1° 43' N ^{1' 56}	175° 21' W ⁴⁰
	0300	1° 37' N ⁴⁶	175° 25' W ⁴⁸
	0400	1° 28' N ³⁰	175° 35' W ^{75' 56}
	0500	01° 23' N ²⁰	175° 49' W ^{76° 04}
	0600	1° 19' N ¹⁶	176° 05' W ¹²
	0700	1° 15' N ¹⁰⁶	176° 08' W ²⁰
	0800	1° 06' N ^{0' 56}	176° 16' W ²⁸
	0900	0° 47' N	176° 38' W
	1000		
	1100		

Oct	3 -	^{2 2} 225	² 7.32	^{1 2} 7.11
	4	545	17.72	17.22
	5	645	20.98	20.38
	6	690	22.44	22.12
	7	705	22.93	22.27
	8	355	² 11.54	² 11.22
		<hr/> 3165	<hr/> 102.93	<hr/> 100.32

$$\begin{array}{r}
 6 \overline{) 53} \\
 \underline{30} \\
 23 \\
 \underline{18} \\
 53 \\
 \underline{30} \\
 23 \\
 \underline{18} \\
 53
 \end{array}$$

<u>Date</u>	<u>Time</u>	<u>Latitude</u>	<u>Longitude</u>	
Oct. 7	0600	7 35' N	170 15' W	
	0700	7 27' N	170 22' W	
	0800	7 19' N	170 30' W	
	0900	7 16' N	170 31' W	
	1000	7 09' N	170 40' W	
	1100	7 00' N	170 47' W	
	1200	6 51' N	170 55' W	
	1300	6 43' N	171 03' W	
	1400	6 34' N	171 11' W	
	1500	6 26' N	171 18' W	
	1600	6 18' N	171 27' W	
	1700	6 09' N	171 35' W	
	1800	6 00' N	171 44' W	
	1900	5 57' N	171 52' W	
	2000	5 37' N	171 41' W	
	2100	5 29' N	171 50' W	
	2200	5 21' N	171 57' W	
	2300	5 13' N	172 06' W	
	Oct. 8	0000	5 04' N	172 14' W
		0100	4 56' N	172 23' W
0200		4 48' N	172 31' W	
0300		4 39' N	172 40' W	
0400		4 31' N	172 47' W	
0500		4 22' N	172 56' W	
0600		4 14' N	173 04' W	
0700		4 55' N	172 37' W	
0800		4 47' N	172 45' W	
0900		4 30' N	172 53' W	
1000		4 20' N	173 05' W	
1100		4 11' N	173 14' W	
1200		4 00' N	173 24' W	
1300		3 48' N	173 31' W	
1400		3 38' N	173 38' W	
1500		3 28' N	173 48' W	
1600		3 20' N	173 58' W	
1700		3 10' N	174 08' W	
1800		3 04' N	174 13' W	
1900		3 00' N	174 16' W	
2000	2 48' N	174 33' W		
2100	2 29' N	174 33' W		
2200	2 20' N	174 53' W		
2300	2 11' N	175 02' W		
Nov. 9	0000	2 05' N	175 12' W	

SMITHSONIAN INSTITUTION

WASHINGTON 25, D. C.

Blood Sampling

I was distressed by the message from Dr. Sudduth saying Chief Girgosian will require minimal assistance from the Smithsonian Party (copy of message enclosed). I think the record should be put straight with Dr. Sudduth as to how much time it takes to collect blood samples and how much extra work this involves.

1. All identification is done by Smithsonian
2. All locating and catching of birds is done by Smithsonian
3. All holding of birds while blood sample is being taken is done by Smithsonian.
4. All blood samples from small birds. (Shearwaters and below) are taken by Smithsonian. This means over half the samples.
5. All hunting and shooting of cats or birds is done by Smithsonian.

On an island like McKean where the birds are walking underfoot it took six hours to obtain 150 samples with all people working at a fast pace. On an island like Baker each cat sample represents 20 man hours of hunting.

The chief does a wonderful job of running samples and certainly relieves the party of considerable work, but over a third of our evening time is spent on blood collecting instead of banding.

Last minute request for blood samples make it difficult to make a logical schedule. The request this time could have resulted in a three day delay at Canton. Fortunately an extra flight came in a few days before the regular~~y~~ flight and we were not delayed (i.e. only lost one day).

In view of the emphasis in the message on "minimal assistance" and no change in schedule we will continue to use only 25-35 percent of our time for blood collecting. Will not even attempt to chase such things as Whimprels, Sanderlungs and don't expect much luck on Bristle-tassled Curlews or Golden Glovers.

Theo C. Sibley



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



Progress Report

Party arrived in Samoa on the 8th and 4 beery days later departed. Despite other demands at least one member hit every bar in town every day.

Birds: Local informants said they were present but we didn't see any.

Blood: Running all over the place. Boiling too.

Reptiles: Aptly describes most females; other half falls under axes.

Banding : Band aids on Larry. 64 strings of No. 3 bands traded to the locals.

Mammals: Humans -- only one sex, male; this split into males and imitation females. A near (but not very) human species seems to consist exclusively of females. Survey of 6 miles of tropical stream revealed no Polynesians* (females) Believe they are extinct.

S.I. Personnel: After latest round of mail from S.I. everyone downed a few more drinks for the long *\$[/]♂♂* road back to the islands.

Hed
Roger
David
Larry



SMITHSONIAN INSTITUTION

WASHINGTON 25, D. C.

Oct. 18. 1963

FIRST PROGRESS REPORT - OCTOBER, 1963

Itinerary

- Oct. 1 Arrived Honolulu and pick^{ed} up supplies from Navy Storage
Oct. 2 Moved all gear on U.S.S. Tawakoni
Oct. 3 Departed Pearl Harbor at 10 AM
Oct. 4-Oct. 8 At sea
Oct. 9 Landed on Howland Island at 11AM
Oct. 10-Oct. 13 On Howland
Oct. 14 Left Howland at 8 AM
Landed Baker at 1PM
Oct. 15-17 On Baker Island
Oct. 18 Departed Baker Island at 8AM

Field party consisting of Fred Sibley, Roger Clapp, Dave Bratley and Larry Huber was joined at Pearl Harbor by Chief Giragosian from DTC.

At sea records were kept from Pearl Harbor to Howland Island during daylight hours. Two Ruddy Turnstones, Three Red-footed Boobies and One Bonin Island Petrel were collected during this time.

HOWLAND ISLAND

Complete nest counts were made of all birds present. Fourteen species were recorded of which five were nesting. Complete list and estimates given in appendix.

Following birds were banded:

Masked Booby - Adult	1873
Immature	50
Nestling	17

Red-tailed Tropic Bird - Adult	11
Nestling	13

Blood Samples taken from the following birds

Masked Booby - - -	10
Brown Booby - - - - -	10
Red-footed Booby - -	10

Greater Frigate - 3
 Red-tailed Tropic Bird - 3

Following Birds Collected:

Masked Booby - 10
 Brown Booby - 3
 Golden Plover - 5
 Ruddy Turnstone - 3
 Bristle-thighed Curlew - 2
 Gray-backed Tern - 2
 Wandering Tattler - 1

Other vertebrates: Series of skinks and gekkos collected. Estimated 20 some cats on the island - none shot. One turtle seen in the surf offshore.

BAKER ISLAND

Only one species of bird nesting (Common Noddy) and only small numbers of others seen roosting on the island.

Banded: 6 Adult, 12 Immature and 37 nestlings of Common Noddy

Blood: Common Noddy - 10
 Ruddy Turnstone - 3
 Great Frigate - 1
 Cat - 4

Collected: Golden Plover - 8
 Ruddy Turnstone - 9
 Wandering Tattler - 3
 Common Noddy - 10
Limosa sp? - 2
Ereunetes? sp? - 2

Other vertebrates: Series of skinks and gekkos collected. Estimated 15 cats on the island. Four collected. One turtle seen every day just offshore.

Numbers of birds on Howland considerably less than last time. Baker has more shorebirds including two species which we could not identify. Collected two of each species.

of these

Equipment holding up fairly well. Tents have gone through several heavy rains with only minor leaks.

Chief has been running all blood samples on the ship thus taking a large amount of work off the Smithsonian Party.

Fred C. Sibley

APPENDIX

People from the Point Barrow who were also working the islands while we were there wanted an estimate of the birds to include in their report. They will call sometime in November for the attached list.

HOWLAND ISLAND

Masked Booby	Adult	2600	
	Immature	100	
	Nestling	18	
	Nest with egg	15	
Brown Booby	Adult	100	
	Immature	20	
	Nest with egg	5	
Red-footed Booby	Adult	100	
	Nestlings	3	
	Nest with egg	3	
Greater Frigate	Adult	40	only about 10 roosting on island
	Nest with egg	1	
Lesser Frigate	Adult	40	none roosting on island
Red-tailed Tropic Bird	Adult	40	
	Nestling	13	
	Nest with egg	3	
Golden Plover		60	
Ruddy Turnstone		120	
Wandering Tattler		15	
Bristle Thighed Curlew		2	
Gray Backed Tern		17	
Sooty Tern		several thousand	none landing on island
Hawaiian Noddy		1	
Fairy Tern		1	

BAKER ISLAND

Christmas Island Shearwater		1 offshore
Barcourts Storm Petrel		1 offshore
Masked Booby		6 flying over only
Brown Booby		21 most just flying over
Red-footed Booby		7-8
Red-tailed Tropic Bird		6 none landed on island
Fr ^s Great Frigate		40 plus - unable to separate species because of species distance
Lesser Frigate		
Golden Plover		100
Ruddy Turnstone		150
Wandering Tattler		35
Bristle Thighed Curlew		5
Godwit sp?		2
Sandpiper sp?		2
Sooty Tern		several hundred flying over at night
Common Noddy	adult	80
	Immatures	20
	Nestling	37

SMITHSONIAN INSTITUTION
WASHINGTON 25, D. C.

Oct. 22, 1963

SECOND PROGRESS REPORT * OCT-NOV. TRIP

Oct. 18 Landed on Howland Island about 2:00

Oct. 19 - 20 On Howland Island

Oct. 21 Left Howland Island about 7:00 AM

On our second visit to the island we recounted all nests, banded the few remaining birds, collected insects and surveyed the plants.

Activities between our first and second visit had resulted in about a 50 percent reduction in the nesting population of Masked Boobies.

Banding:		2nd visit	total	percent banded
Masked Booby	Adult	305	2178 1381*	95
	Immature	67	117	95
	Nestling	-	17	100
Red-tailed Tropic Bird	Adult	1	12	25
	Nestling	-	13	100
Red-footed Booby	Adult	31	31	30
	Immature	5	-5	30
	Nestling	1	-1	100
Great Frigate	Adult	1	-1	30
Common Noddy	Immature	3	-3	30
	Adult	1	1	100
Collecting:		2nd visit	total	
Masked Booby		-	10	
Brown Booby		7	10	
Red-footed Booby		11	11	
Lesser Frigate		1	1	
Golden Plover		3	8	
Ruddy Turnstone		-	3	

	2nd visit	total
Wandering Tattler	2	3
Bristle-thighed Curlew	-	2
sandpiper sp? 1	1	1
sandpiper sp? 2	1	1

In the two visits a total of 17 species have been recorded only 5 of which were breeding.

Blood Samples:	2nd visit	total
Masked Booby	-	10
Brown Booby	-	10
Red-footed Booby	-	10
Great Frigate	7	10
Lesser Frigate	1	1
Cat	10	10
Red-tailed Tropic Bird	7	10

As on the first visit a tidal wave warning forced the party to spend an entire night around the lighthouse (captain's orders) thereby reducing our time for field work.

Cats on Howland were less educated than on Baker and we were able to shoot 10 and catch another by hand after chasing it to exhaustion. Still an estimated 10-15 on the island.

No turtles seen on the second visit.

Since Roger the Lodger has now become a shellback I will let him sign the report. Wonderboy Huber and ~~Dave the Brat~~ are both in good health after the equator crossing.
Sleepy Dave

Hud

Sibley the Rat

Roger the Lodger

INSTRUCTIONS - D C

GENERAL INFORMATION

-1-

SMITHSONIAN INSTITUTION

WASHINGTON 25, D. C.

Third Progress Report - October-November Trip

Itinerary

Oct. 22 Landed Canton 3 PM
Oct. 23 Left Canton 2 PM
Oct. 24 Landed McKean 5 PM
Oct. 25-27 On McKean
Oct. 28 Left McKean 6 AM, landed Gardner 2 PM
Oct. 29 Left Gardner 4 PM
Oct. 30 Landed Hull 10 AM
Left Hull 5 PM
Landed Hull 7 PM
Left Hull 8 PM
Oct. 31 Landed Sydney 8 AM
Nov. 1-2 On Sydney
Nov. 3 Left Sydney 8 AM, landed Phoenix 2 PM
Nov. 4-5 On Phoenix
Nov. 6 Left Phoenix 6 AM
Nov. 7 At sea
Nov. 8 Arrival Pago-Pago.

During the period of the third progress report 6 islands were visited. Four of these were inhabited or only recently vacated and had very few birds. The other two were covered with great numbers of birds. Due to the scarcity of birds on some islands the party ran well ahead of the initial schedule. This means we have 15 days left for Birnie and Enderbury before departing for Pearl Harbour to arrive the fifth. How much of this time we use depends on (1) need to return by first for Yag cruise, (2) general attitude of the ship. If there is no need to meet Yag schedule we will probably remain on Enderbury until the 30th of November.

A summary of each island is given under separate heading. In summary: 28 species of birds, 4 species of mammals, and 4 species of reptiles have been recorded. 9278 birds of 18 species were banded. 97 skins of 23 species were collected. 327 blood samples of 22 species were taken. About 100 skinks and gekkos of 3 species were collected from 4 islands.

Fred C. Sibley

Fred C. Sibley

Research Curator

Research Curator

↑
whover he is

-2-

SMITHSONIAN INSTITUTION

WASHINGTON 25, D. C.

CANTON ISLAND

Party spent 24 hours here from late on the 22nd to late on the 23rd. Party covered all parts of the island at least once.

Made contact with the British resident concerning our visit to the Phoenix Islands.

Birds: 11 species recorded of which 4 were nesting. Heaviest concentrations of terns were on Spam Island.

Banding: 37 birds of 4 species were banded.

<u>Species</u>	<u>Number</u>	<u>Percent of Birds</u>
Red-footed Booby	1	2
Great Frigate	1	.5
Gray-backed Tern	1	.003
Common Noddy-nestling	34	90

Blood Samples : 23 samples of 5 species were taken

<u>Species</u>	<u>Number</u>
Red-footed Booby	1
Great Frigate	1
Gray-backed Tern	10
Common Noddy	10
CAT	1

Collecting : 2 specimens of a species of Godwit were collected.

Mammals :
 Cats; abundant. Wild as well as pets.
 Dogs; at least 5 different pets
 Rats; four young removed from stomach of cat.
 Humans; 400-500 Almost half Americans and the other half Gilbertese.

Reptiles :
 Skinks; - common
 Turtles - reported as common in lagoon, none found on beach.

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McKEAN ISLAND

Party landed here late the 24th in heavy surf. Had waited all day for surf to lessen before attempting the landing. Lost only minor items overboard although all equipment was soaking wet.

Island literally covered with birds but a bright moon and clear sky made it very difficult to catch birds.

Birds: 23 species were recorded of which 16 were nesting. ³⁶¹⁷~~9416~~ birds of 13 ~~12~~ species were banded.

Species	Number Banded	Percent of Birds
<i>Bulwer's Petrel</i>	2	1
Wedge-tailed Shearwater	59	15
Audubon's Shearwater	350	7
White-throated Storm Petrel	1	1
Masked Booby - adult	177 389	25 35
immature	25	40
nestling	*28* 156	100
Brown Booby	7	7
Red-footed Booby - adult	42	20
nestling	28 17	100
Lesser Frigate - nestling	1898	45
Red-tailed Tropic Bird - adult	5 6	5
nestling	14 13	25
Bristle-thighed Curlew	1	1
Common Noddy - adult	105	2
nestling	52	10
Fairy Tern	207	10
Blue-gray Noddy	388	5

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WASHINGTON 25, D. C.

McKean Island page 2

Blood Samples : 172 samples of 17 species were taken.

<u>Species</u>	<u>Number of Samples</u>
Wedge-tailed Shearwater	10
Christmas Is. Shearwater	1
Audubon's Shearwater	20
Bulwer's Petrel	1
Masked Booby	22
Brown Booby	12
Red-footed Booby	10
Great Frigatebirds	10
Lesser Frigatebirds	10
Red-tailed Tropic Bird	1
Bristle-thighed Curlew	5
Gray-backed Tern	10
Sooty Tern	10
Common Noddy	19
Hawaiian Noddy	10
Fairy Tern	11
Blue-gray Noddy	10
	<u>172</u>

Birds Collected : 75 specimens of 16 species were collected.

<u>Species</u>	<u>Number of Specimens</u>
Wedge-tailed Shearwater	10
Christmas Is. Shearwater	1
Audubon's Shearwater	10
Bulwer's Petrel	4
White-throated Storm Petrel	7
Brown Booby	1
Great Frigate	4
Lesser Frigate	10
Bristle-thighed Curlew	1
Crested Tern	1
Sooty Tern	1
Common Noddy	1
Hawaiian Noddy	3
Fairy Tern	4
Blue-gray Noddy	12
Sandpiper No. 2 (same as Howland)	5
	<u>75</u>

Mammals : No evidence of any species of mammal.

Reptiles : No skinks, gekkos scarce; 4 collected. Turtles laying eggs but don't come on beach until 4 A.M. because of bright moon.

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WASHINGTON 25, D. C.

PROGRESS REPORT * GARDNER ISLAND

Party spent 26 hours here from late the 28th to late the 29th. Party covered all parts of the island at least once including an entire circuit of the island on foot. (10 miles plus)

Birds: 17 species were recorded. Only 3 species were breeding, 1 was domesticated, and 6 species were represented by less than 10 birds.

Banding: Not possible to reach any of the nesting birds. They were either 60-90 feet up in trees or 20-30 feet up in coconut palms.

Blood Samples : Taken only from shot birds. 8 samples from 5 species.

Red-footed Booby	2
Great Frigate	1
Wandering Tattler	2
Godwit	2
Sandpiper No. 2	1

Collected: 12 specimens of 5 species were collected.

Red-footed Booby	4
Great Frigate	1
Wandering Tattler	2
Godwit	2
Sandpiper No. 2	3

The difference between collecting and blood sampling shows the difficulty in obtaining enough blood from dead birds.

Mammals: Cats and dogs kept by natives; 10-15 of each. 210 natives will be evacuated by Christmas. Some rats seen.

Reptiles : Skink - fairly common, 2 collected.
 Small species gekko - 30 plus or minus collected.
 Large species gekko - 5 plus or minus collected.
 Turtles - 2 seen offshore but natives didn't succeed in catching them.

Numerous insects were collected, plants were surveyed, and photographs were taken of all major habitat areas.

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HULL ISLAND ** PROGRESS REPORT

In view of the scarcity of birds on all inhabited islands we decided to forestall setting up camp and instead conduct a preliminary survey of the island. We landed at 9:30 A.M. and split into two teams which started around the island in opposite directions. All birds seen were censused. Because of the narrowness of the outer rim of the island it was possible to get an almost 100 percent coverage of the birds.

We finished the circuit of the island after walking 8 miles each. A total of 24 channels were ~~found~~, forded.

We landed again after dark to collect gekkos and left again at about 8 P.M.

Birds: A total of 2894 birds of 10 species were seen, 2,300 of them being Hawaaiian Noddy. Only 4 species were nesting. The Sooty Terns are reported to nest in tremendous numbers during June and December.

Banding: 25 nestling Hawaaiian Noddy were banded. Height and weakness of trees ruled out any attempts at night time banding of adults.

Blood samples : Chief Giragosian obtained three samples from turtles caught by the natives.

Mammals: Large numbers of cats and dogs kept as pets. At least 40-50 of each.

One Polynesian rat? seen.

Human population totals 590 plus or minus and all will be evacuated during November and December.

Reptiles: Possibly two species of skinks occur. About 5 collected. 5 specimens apiece of two species of Gekko were collected. Shells of turtles were scattered all over the island. Three were caught while we were there.

A survey of plants was made and some insects were collected.

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SYDNEY ISLAND ** PROGRESS REPORT

Because of the rapid coverage of Gardner and Hull Islands it became necessary to spend a few days on Sydney regrouping. Time was spent skinning birds, repairing equipment and generally catching up.

A complete coverage of the island was made including about 2 miles of swimming, encumbered by life preserver, to and from the islands in the lagoon.

Birds: 1040 individuals of 14 species were observed. There were only two nesting species and both of these were restricted to the central lagoon.

Banding: 11 Gray back Tern nestlings were banded.
17 Common Noddy nestlings were banded.

Blood Samples : 4 samples from cats were taken.

Collecting: Sandpiper No. 4 1
Ruddy Turnstone 2

Reptiles: 1 species of skink and 2 species of gekko occur. Turtles were not found although numerous tracks were seen on the beach.

Mammals: All humans evacuated in 1961. 3 dogs were seen. Rats were numerous (Polynesian) and 3 were collected. 5 cats including 3 kittens were killed. No others were seen.

There was good coverage of insects and plants plus photographs of various habitats.

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Phoenix Island - Progress Report

The party landed here the afternoon of the 3rd and left at 6 AM on the 6th. We worked a harder and longer schedule since we were leaving for Samoa on the 6th and would have several days to rest up. Late rising and reduced brightness^{of the moon} made banding easier than on McKean.

Birds: 25 species were recorded of which 17 were nesting

Banding: 5772 individuals of 12 species were banded.

Wedge-tailed Shearwater		695
Christmas Island Shearwater	adult	178
	nestling	21
Audubon's Shearwater		500
Masked Booby	adult	715
	immature	59
	nestling	131
Brown Booby	nestling	2
Red-footed Booby	adult	22
	immature	1
	nestling	1
Great Frigate	adult	3
	nestling	104
Lesser Frigate	nestling	1800
Red-tailed Tropic Bird	nestling	1
Sooty Tern	adult	500
	nestling	400
Common Noddy	adult	83
Blue-gray Noddy	adult	358

Collecting: 5 individuals of 2 species were collected.

Christmas Is. Shearwater	4
Phoenix Is. Petrel	1

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Blood Samples: 120 samples from 14 species were taken.

Wedge-tailed Shearwater	10
Christmas Is. Shearwater	10
Audubon's Shearwater	10
Phoenix Island Petrel	2
Masked Booby	10
Red-footed Booby	4
Great Frigate	10
Lesser Frigate	10
Bristle-thighed Curlew	2
Sooty Tern	10
Gray-backed Tern	6
Common Noddy	10
Blue-gray Noddy	6
Rabbit	20
	<hr/>
	120

Mammals: Rabbits are the only mammal present. Probably over 1000.

Reptiles: None seen. Evidence of turtles using the island for nesting.

Fourth Progress Report
Nov. 16, 1963

- Nov. 8 Arrived Pago Pago, American Samoa, 9 AM
- Nov. 9-11 At Pago Pago
- Nov. 12 Departed Pago Pago, 8 AM
- Nov. 13 At Sea
- Nov. 14 Landed Birnie Island 2 PM
- Nov. 15 On Birnie
- Nov. 16 Departed Birnie Island at 7 AM

Samoa

This stop was a rest and recreation stop for the crew and the ship was open to visitors during this period. As a result it was impossible to collect or skin birds. Party spent all four days walking to various parts of the island including the airport and the highest mountains. Only four species recorded for the island were not seen by the group.

Birnie Island

This was the smallest island visited and the first with a really dense population of rats. A total of 40 hours were spent here.

Birds : 21 species recorded only 4 of which were breeding.

Banding: 1190 birds of 3 species were banded:

Masked Booby	Adult	699
	Nestling	50
Brown Booby	Adult	38
	Nestling	3
Common Noddy	Adult	365
	Nestling	35

All Masked Boobies were marked with spray paint to enable us to distinguish current bands from older ones.

As a result 41 Masked Boobies and 1 Red-footed Booby were recaptured.

Collecting: 5 specimens of 3 species were collected.

Christmas I. Shearwater	1
Sandpiper No. 1	3
Sandpiper No. 2	1

Reptiles : Evidence of turtles but none seen.

Mammals: Island overrun with small rats. 10 collected and 10 blood samples obtained from about 40 rats.

Frank C. Sibley



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



FIFTH AND LAST PROGRESS REPORT
OCT-NOV PHOENIX ISLAND TRIP

Nov. 27, 1963

- November 16 Landed on Enderbury at 11AM
- November 17-19 On Enderbury
- November 20 Left Enderbury at 11PM
- November 21 Left Roger Clapp and Dave Bratley on Canton at 5AM
- November 22-25 At sea
- November 26 Arrived Pearl Harbor 4PM

ENDERBURY ISLAND

Landed here in rough surf and left in almost complete calm. Working conditions on the island were the hottest encountered on this trip.

BIRDS: Eighteen species of birds were recorded of which nine were breeding.

BANDING: 3589 birds of 10 species were banded as listed below.

Species		Number	Percent of Population
Masked Booby	Adult	666	90-95
	Immature	176	90-95
	Nestlings	66	95-100
Brown Booby	Adult	57	50
	Immature	12	50
	Nestling	2	20
Red-footed Booby	Adult	570	30-40
	Immature	140	30-40
	Nestling	217	95-100
Great Frigate	Adult	44	5
	Nestling	356	95-100

Lesser Frigate	Nestling	1138	85-90
Red-tailed Tropic Bird	Adult	2	5
	Nestling	16	70
Bristle-thighed Curlew		1	5
Gray-backed Tern	Adult	29	2
	Nestling	26	95-100
Common Noddy	Adult	1	.3
	Nestling	17	95-100
Hawaiian Noddy	Adult	45	5

RECOVERIES: 732 bands were recovered on 3 species as listed below.

Masked Booby	705
Brown Booby	11
Red-footed Booby	16

Collecting: One specimen of sandpiper no. 2.

BLOOD: 52 samples of 6 species.

Masked Booby	10
Brown Booby	2
Red-footed Booby	10
Great Frigate	10
Lesser Frigate	10
Gray-backed Tern	10

REPTILES: One species of skink and one species of gekko. Several turtles seen on beach.

MAMMALS: Cats are evidently the only mammal present and are rare.

Short Summary of Trip

16,491 birds of 18 species banded
 197 birds of 23 species collected
 468 blood samples of 22 species taken
 Various plants, insects and mammals also were collected.

Of the 61 days spent away from Washington, 2 were spent traveling to and from Washington, 4 were spent in Honolulu, 25 at sea or in Pago Pago, 30 on various study islands. Of the time ashore a minimum of 7 days were spent taking blood samples.

DATE: October 3, 1963Total Minutes: 225Total Miles: 45

I. Total Abundance of birds: ATF Tawakoni -- 2 observers

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
30	38		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
21	10	4	1	25	13	4	1								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
2			2			1.0			1.0		

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1	

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	RF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
3		2	1	3		2	1	1		1	1				

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
5	6		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0					

DATE: October 4, 1963Total Minutes: 545Total Miles: 121

I. Total Abundance of birds: ATF Tawakoni - 2 observers

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
23	53		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
15	5	8	0	40	20	20	0								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
4		4	4		4	1		1			

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
4	27		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0															

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1	

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
2	45		-----not noted-----		

DATE: October 5, 1963 Total Minutes: 645 Total Miles: 117

I. Total Abundance of birds: ATF Tawakoni --- 2 observers

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
22	107		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
14	3	11	0	15	3	12	0								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
1	1		1	1		1	1				

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	85	85	

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	3	1	

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
3	1	2	0	3	1	2		1	1	1					

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
1	85		-----not noted -----		

DATE: October 6, 1963Total Minutes: 690Total Miles: 149

I. Total Abundance of birds: ATF Tawakoni - 2 observers

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
29	67		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
17	2	10	1	28	4	10	1								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0											

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	22		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
7		7		10		10									

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
1	28		-----	not noted	-----

DATE: October 7, 1963 Total Minutes: 705 Total Miles: 131

I. Total Abundance of birds: ATF Tawakoni ----- 2 observers

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
47	222		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
34	3	14	3	65	12	29	3								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
2		2	3		3						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	141		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
2	2	1	

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	RF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0															

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
2	165		----	not noted	----

DATE: October 8, 1963

Total Minutes: 515

Total Miles: 119

I. Total Abundance of birds: ATF Tawakoni -- 2 observers

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
54	384		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
33	1	2	1	110	1	2	2								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
3	1		4	1							

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
11	193		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
3		3		3	3			1		1					

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
10	286		-----	not noted	---

Annotated List
At Sea Observations - U.S.S. Tawakoni
Oct. 3 - Oct. 8 1963

1. Puffinus pacificus Seen daily throughout the trip. General decrease of numbers until Oct. 5 and subsequent increase with larger proportion of dark phase birds may indicate two different pelagic populations.
2. Puffinus nativitatus Due to general inexperience of observers specific identification of dark shearwaters was difficult. Sibley identified several on Oct. 7.
3. Puffinus griseus One unquestionable sight identification on Oct. 6 by Clapp and Sibley. Another, possibly this species, was seen on Oct. 8.
4. Pterodroma sp. Bonin Petrels were seen with some regularity after leaving Oahu. One was collected by Sibley and Bratley at 0907 Oct. 7, 1963. Several other birds belonging to the genus were seen but generally under conditions in which collecting was impossible.
5. Oceanodroma castro Two birds of this species were seen on Oct. 8.
6. Oceanodroma sp. A very small dark bird with a rapid wing beat was seen on Oct. 4 and may possibly have been the Sooty Storm Petrel.
7. Bulweria bulwerii One was seen Oct. 6, three Oct. 7 and two Oct. 8.
8. Phaethon lepturus This species was seen intermittently throughout the trip. A total of 6 observations, the one furthest south at approximately 6 14' N. latitude and at 171 31 W. longitude.
9. Phaethon rubricauda Seen on Oct. 5 and on Oct. 8. The first observation was at approximately 13 48' N. latitude and 164 20' W longitude.

10. Sula dactylatra One individual, an immature, was observed at 1605, Oct. 5.
11. Sula leucogaster - a single individual was seen shortly after leaving the harbour on Oct. 3.
12. Sula sula This species was the booby regularly encountered at sea. A total of 18 were recorded and three were collected, two Oct. 6 by Sibley and Bratley and one Oct. 7 by Clapp.
13. Fregata minor This species was encountered in steadily diminishing numbers as we left the harbor. Six were seen the first day, one the second day, and none were seen subsequently.
14. Sterna fuscata The most common bird, but not the species most frequently observed. A large number of flocks of this species, occasionally intermixed with the following were seen on Oct. 8.
15. Anous stolidus A single bird, probably this species, was seen as we left the harbor, another was seen on Oct. 4 and a small group intermixed with a flock of Sooty Tern was seen on the 8th.
16. Pluvialis dominica A single individual was seen at 1032 on Oct. 5.
17. Arenaria interpres Seen sporadically throughout the trip. Two were seen Oct. 5, two Oct. 7, and one Oct. 8. Two were collected, one at 1025 Oct. 7 by Bratley and the other at 1803 the same day by Huber.

Table 1
Percent Composition of At Sea Observations - U.S.S. Tawakoni - Oct. 3 - Oct. 8, 1963

Genus	Oct. 3		Oct. 4		Oct. 5		Oct. 6		Oct. 7		Oct. 8		Total	Pc
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.		
<u>Puffinus</u>	15	39.5	6	8.0	2	1.9	9	13.4	29	13.1	105	27.3	166	18.59
<u>Pterodroma</u>	4	10.5	20	26.7	12	11.2	10	14.9	35	15.8	2	0.5	83	9.29
<u>Bulweria</u>	0	0.0	0	0.0	0	0.0	1	1.5	3	1.4	2	0.5	6	.67
<u>Oceanodroma</u>	0	0.0	1	1.3	0	0.0	0	0.0	0	0.0	3	0.8	4	.45
<u>Phaethon</u>	2	5.3	4	5.3	1	0.9	0	0.0	4	1.8	4	1.0	15	1.68
<u>Sula</u>	3	7.9	0	0.0	3	2.8	10	14.9	1	0.5	3	0.8	20	2.24
<u>Fregata</u>	6	15.8	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0	7	.78
<u>Pluvialis</u>	0	0.0	0	0.0	1	0.9	0	0.0	0	0.0	0	0.0	1	.11
<u>Arenaria</u>	0	0.0	0	0.0	2	1.9	0	0.0	2	0.9	1	0.3	5	.56
<u>Sterna</u>	0	0.0	26	34.7	85	79.4	25	37.3	141	63.5	140	36.5	417	46.69
Unidentified	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	97	25.3	97	10.86
Terns	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Unidentified	7	18.4	16	21.3	1	0.9	12	17.9	7	3.2	19	4.9	62	6.94
Total	38	100.0	75	99.9	107	99.9	67	99.9	222	100.2	384	100.0	893	99.98

Table 2

Comparison of Pct. of Total Observation Time and Pct. of Total Birds Seen.

Date	Pct. of Total Observation Time	Pct. of Total Birds Seen
Oct. 3	7.11	4.25
Oct. 4	17.22	8.51
Oct. 5	20.38	11.98
Oct. 6	22.12	7.50
Oct. 7	22.27	24.86
Oct. 8	11.22	43.00
	100.31	100.10

Total Birds Seen 893
 Total Minutes Observation 3165

APPENDIX

Hourly Positions During At Sea Observations

Date	Time	Latitude	Longitude	Date	Time	Latitude	Longitude
Nov 21	0200	3° 03' S	171° 21' W	Nov 23	0100	5° 45' N	166° 38' W
	0300	2 58'	171 29' W		0200	5 55'	166 30'
	0400	2 55'	171 35'		0300	6 06'	166 22'
	0500	2 50'	171 38'		0400	6 16'	166 15'
	0600	2 48'	171 44'		0500	6 26'	166 07'
	0700	2 38'	171 46'		0600	6 37'	165 58'
	0800	2 27'	171 38'		0700	6 48'	165 50'
	0900	2 15'	171 30'		0800	6 58'	165 43'
	1000	2 13'	171 25'		0900	7 08'	165 35'
	1100	1 49'	171 17'		1000	7 19'	165 27'
	1200	1 37'	171 09'		1100	7 30'	165 19'
	1300	1 36'	171 07'		1200	7 39'	165 11'
	1400	1 24'	171 00'		1300	7 55'	165 06'
	1500	1 11'	170 53'		1400	8 06'	164 58'
	1600	0 59'	170 45'		1500	8 12'	164 52'
	1700	0 46'	170 37'		1600	8 28'	164 44'
	1800	0 34'	170 30'		1700	8 40'	164 37'
	1900	0 22'	170 22'		1800	8 51'	164 31'
	2000	0 03' S	170 05'		1900	9 03'	164 24'
	2100	1 50' N	169 59'		2000	9 14'	164 08'
	2200	1 37' N	169 51'		2100	9 27' N	164 03' W
	2300	1 26'	169 44'		2200	9 39'	163 54'
	2400	0 46' N	169 37'		2300	9 51'	163 51'
Nov 22	0100	1 04'	169 30'	Nov 24	2400	10 03'	163 45'
	0200	1 12'	169 22'		0100	10 15'	163 39'
	0300	1 25'	169 14'		0200	10 27'	163 33'
	0400	1 38'	169 06'		0300	10 39'	163 28'
	0500	1 50'	168 58'		0400	10 52'	163 22'
	0600	2 02'	168 48'		0500	11 04'	163 17'
	0700	2 15'	168 44'		0600	11 14'	163 19'
	0800	2 28'	168 38'		0700	11 25'	163 14'
	0900	2 32'	168 36'		0800	11 36'	163 08'
	1000	2 44'	168 28'		0900	11 48'	163 03'
	1100	2 57'	168 20'		1000	12 00'	162 58'
	1200	3 10'	168 14'		1100	12 12'	162 56'
	1300	3 14'	168 07'		1200	12 18'	162 50'
	1400	3 25'	168 00'		1300	12 27'	162 42'
	1500	3 38'	167 53'		1400	12 39'	162 36'
	1600	3 49'	167 45'		1500	12 51'	162 29'
	1700	4 02'	167 38'		1600	13 03'	162 21'
	1800	4 15'	167 30'		1700	13 13'	162 22'
	1900	4 26'	167 24'		1800	13 23'	162 13'
	2000	4 53'	167 17'		1900	13 34'	162 05'
	2100	5 03'	167 09'		2000	13 48'	161 56'
	2200	5 13'	167 03'		2100	13 59'	161 48'
	2300	5 23'	166 53'		2200	14 10'	161 41'
	2400	5 34'	166 46'		2300	14 21'	161 33'
					2400	14 31'	161 25'

APPENDIX

Date	Time	Latitude	Longitude
Nov 25	0100	14° 42' N	161° 17' W
	0200	14 53'	161 10'
	0300	15 04'	161 03'
	0400	15 14'	160 56'
	0500	15 25'	160 47'
	0600	15 36'	160 39'
	0700	15 47'	160 31'
	0800	15 54'	160 40'
	0900	16 06'	160 33'
	1000	16 17'	160 26'
	1100	16 29'	160 19'
	1200	16 39'	160 16'
	1300	16 50'	160 10'
	1400	17 02'	160 03'
	1500	17 13'	159 55'
	1600	17 23'	159 48'
	1700	17 32'	159 41'
	1800	17 41'	159 31'
	1900	17 52'	159 23'
	2000	18 04'	159 16'
	2100	18 14'	159 10'
	2200	18 25'	159 04'
	2300	18 36'	158 58'
	2400	18 47'	158 51'
Nov 26	0100	18 58'	158 46'
	0200	19 03'	158 44'
	0300	19 09'	158 40'
	0400	19 19'	158 33'
	0500	19 30'	158 27'
	0600	19 36'	158 20'
	0700	19 51'	158 14'
	0800	20 00'	158 10'
	0900	20 12'	158 09'
	1000	20 26'	158 08'
	1100	20 40'	158 02'
	1200		
	1300		
	1400		
	1500		
	1600		
	1700		
	1800		
	1900		
	2000		
	2100		
	2200		
	2300		
	2400		

DATE: November 22, 1963Total Minutes: 330 460Total Miles: 97

I. Total Abundance of birds: ATF Tawakoni - 1 observer

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
16	35		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
10		8	1	10		8	1	1		1	1				

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
1		1	1		1	1		1			

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	20	20	

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0															

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
1	20		----- not noted -----		

DATE: November 23, 1963Total Minutes: 460Total Miles: 99

I. Total Abundance of birds:

ATF Tawakoni -- 1 observer

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
36	108		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
28	7	13	1	101	61	14	1								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
4	3	1	4	3	1	1	1	1			

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	10	10	

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
5		5		8		8									

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
2	66		---- not noted ----		

DATE: November 24, 1963

Total Minutes: 450

Total Miles: 90

I. Total Abundance of birds: ATF Tawakoni -- 1 observer

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
13	20		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
8	1	5	0	11	1	6	0								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
2	2		3	3							

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
1				1											

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0					

DATE: November 25, 1963

Total Minutes: 420

Total Miles: 102

170

I. Total Abundance of birds: ATF Tawakoni -- 1 observer

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
14	18		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
12	12			15	15										

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0											

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
2	3		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0															

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0					

DATE: November 26, 1963

Total Minutes: 130

Total Miles: 51

I. Total Abundance of birds: ATF Tawakoni -- 1 observer

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
18	23		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
13	10	1		17	14	1									

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0											

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	4		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	RF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
2		2		2		2		1		1					

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0			

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0					

Pacific Ocean, 1 day out of Oahu, Hawaiian Is.

Observers - Watch 1 - Clapp, Sibley, Huber

- Watch 2 - Clapp, Huber.

Oct. 3

10:45			Left harbour
11:06	Frigate-bird	1	
11:07	Frigate-bird	1	
11:11	Anous ? sp	1 (10)	Dark above, below, & steady tern like flight but low over water -
11:14	Frigate-bird	2	
11:14	WT	1	
11:18	WT	1	
	RF Booby	1	white-tail
11:22	WT	1	
11:23	Frigate-bird	1	
11:45	"	1	
12:08	Brd sp.	1	Glimpsed far too briefly for identification Possibly had a white rump. Observations conc. 12:30 Observations rebegan 4:20
4:20	Brown Booby	1	
4:30	WT	1	
4:31	Bonin Petrel	1	
4:31	WT	1	
4:37	Brd WT ? sp	3	
4:41	Bird sp?	1	
4:45	Bonin Petrel	1	
4:46	Pt. sp?	1	
4:00	WT		Between 4 & at quarter
	WT TB		after 4 - 2 WT Tropic Birds
	R P P		were seen.

$$\begin{array}{r} 60 \\ 3 \\ \hline 180 \\ 45 \\ \hline 225 \end{array}$$

1 hr 45 min -

1145

2

Oct. 3

455	Bulwer's ?	1
	Brd sp. ?	1
459	WT - D-phase	
	in CE Sh.	1
5:00	Brd sp ?	1
5:07	Bird sp ?	2
5:08	Bonin Petrel	1
5:15		
5:44	WT	1
5:49	WT - dk-phase	1
5:56	WT	2
6:02	WT	1
6:12	WT	1
6:10		
6:18	RF Body	1
6:20		

About same size as above

Suggested Barn, very faint wing

~~at sand.~~

imm.

38 bird

0 flocks

2

Oct. 4

Observers - primarily Clapp; assisted Brattley, Huber

Obs. begun 7:25

8:32 WT-TB 1

8:55 WT 1

8:56 Bonin Petrel 3

Shearwater? 1 1

large-heavy bodied, dark above & below, slower wing-beat - Took off from water - 3 Bonins a compact group.

9:15 Bonin Petrel 1

At edge of rain squall

9:20 Bird sp.? 1

Not seen well D.A.B.

10:22 Storm petrel? sp.? 1

Very small, very rapid wing-beat - Possibly Sooty Storm Petrel.

10:57 Flock 10

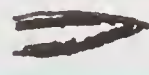
Sooty Tern stolidus 1

Anous Tern 1

Pter. 8±

One bird seen well had typical gray back pattern - Pure white wing linings larger than Bonin - lighter rump. Most probably

A. externa

 well seen

12:11 Bonin Petrel

12:48 W.T. Tropic Bird

12:52 Sooty Tern 20±

Shearwaters & Petrels 15±

12:55 wedgetail 1

1:05 ~~P~~ *TERODOMA* sp. 2

8
9
10
11
12
13
14
15
16

60
9

540

Oct. 4

1318 1 W.T. Tropic Bird
1 Frigate Bird
5 Sooty Terns
1405 1 Wedgetail?
1416 1 White Tail T.B.
1420 1 Bonin Island Petrel?
1433 2 Wedgetail,?
1438 2 Bonin Island?
1444 1 " " ? - shot at on water
1618 Pterodroma sp.? 1
1630 Obs. concluded—

85 birds

2 flock mixed

Oct. 5

Pacific Ocean - 3 days out of Honolulu, Oahu, H. Is.

Observers - Clapp, Sibley

7:10

Observations begun.

7:25

Flock

Sooty Terns

85 ± 5

Flying generally NE

7:33

Ruddy Turnstone

1

8:02

Ruddy Turnstone

1

8:15

Petrel-Shearwater?

1

8:32

wedgetail?

1

9:15

Pt. species

1

9:43

Pt. species

1

Wedgetail dk phase

1

9:47

RT TB

1

9:55

Pt. sp.

1

Too large for Bonin -

10:32

Golden Plover

1

chirping

11:25

Ptero. species

1

11:32

Ptero "

1

11:34

Ptero "

2

12:22

Ptero. species

1

wh breast; dusky throat
eye + cap at head; wh
neck; dark brown on upper
wing with light
streak; light across
rump

2:50

Ptero. species

1

3:20

RF Booby

1

imm.

3:26

RF Booby

1

imm. sitting on water

4:05

Masked Booby

1

imm

8
9
10
11
12
13
14
15
16
17

45

Oct. 5

4:21 Pt. species? 1
4:57 Pt species 1
5:04 Pt. species 1
5:55 Obs. concluded

107 birds
1 flock

51

Sibley, Clapp, Bratley, Huber

Oct. 6

- 6:30 obs started
- 2 red-footed boobies
- 6:35 +1 " " "
- 6:40 +2 " " " (i.e. total of 5)
- 7:15 1 Shearwater or petrel?
- 7:22 1 " " " ?
- 7:50 Flock
- 20± sooty tern
- 7-8 shearwaters-petrels - 2 sizes
- 7:54 1 r.f. booby - subadult plumage
- 8:00 1 Pterodroma sp? -
- 8:07 1 " " ? -
- 8:08 2 WT invariably sitting on water
- 8:15 2 WT crossing bow, OOR
- 8:30 1 Pterodroma sp?
- 8:55 1 Red-footed Booby
- 9:10 1 Pterodroma sp. ?
- 9:23 1 " " ?
- 9:24 1 " " ?
- 10:07 1 Tern sp?
- 10:18 1 Pterodroma sp?
- 10:56 1 Brown Petrel
- 12:36 5± Sooty Tern way out to shelf
- 2:10 1 Pterodroma sp.
- 2:41 2 Shearwater sp. dark above, below heavy breast. C. ad ?
- 3:02 1 Bulwers P. Puffins seen but had light my brow right side rather right flight -
- 303 1 Pterodroma sp.

7
8
9
10
11
12

13
14
15
16
17

60
11

660-10

650

Oct. 6

320 Bul sp? 1
 340 Sooty Shearwater 1 seen well RBC, 9-25
 425 Shearwater sp? 2
 — obs. stopped at 5:20
 6:00 Red footed Booby - 2 both collected
 6:40 " " " - 1

67
~~68~~ birds
 1 Flock mixed

Oct. 7

- 6:20 - Observations started
- 6:38 Bnd sp? 1
- 6:48 Shearwater sp? 1 dark above, dark below
at very long range
- 7:42 Pteroc sp 2 all dark
- 8:00 Pteroc sp 1 all white under
wing linings, all
white beneath;
dusky brown
above with black
wing tips
- 8:07 Pteroc sp 1
- 8:32 Bnd sp 1
- 8:47 " " 1
- 8:48 Pteroc sp 1 with dark edges
to underwing
- 8:58 Bnd sp 1 sitting on water
- 9:00 Shearwater sp 1 brown above, below
- 9:02 Pteroc sp? 1
- 9:07 Bnd shot flocky on water by Sibley & Beattley
- 9:15 Pteroc sp. 2
- 9:25 W-T 1
- 9:40 W-T Tropicbird 1
- 9:59 Pteroc species 1
- 10:22 Pteroc species 4 } 2 dark } sitting on water
1 light }
- 10:25 Ruddy Turnstone 1 - shot (Beattley)
- 11:07 Bulwer's Petrel 1
- 11:23 ~~Pteroc~~ Shearwater? 1 - all dark
- 11:36 Shearwater sp? all dark

Oct 7

- 1253 1 Bulwer's Petrel
1 Sooty Tern
1330? 1 all dark shearwater
1335 1 Bulwer's
1456 2 Shearwater sp? /
1514 WT?
1515 Sooty Tern 15±
WT 10±
1530 Bird sp? 2
1531 Bonin Island type 1
1545 Flock
Sooty Tern 125±
Petrels - sev. sp. 15±
1555 Petrel sp? 1
1600 Tropic-bird sp? 1
1602 Shearwater sp? 1
1608 CI Shearwater 1 ident. by FCS.
1622 Shearwater sp 3
Pterodroma sp 1
1625 ~~Pterodroma~~ sp 1
1632 WT Tropic Bird 2
1647 CI Shearwater 2 ident FCS
1708 Pterodroma 1
1712 Bird 1
1715 Pterodroma 1
1732 Bonin Island pet. 1
1737 Pterodroma 1
1742 Shearwater 1
1755 Christmas Island Shearwater 1

Oct

1803 - Muddy turnstone 1 (Col. 2714)
Observed 1805

1 Red-footed Booby shot subsequently RBC

22 birds

2 flocks used

Oct	3	36
Oct	4	85
Oct	5	107
Oct	6	66
Oct	7	211
		<hr/>
		505
		353

6	139.5
6	835
6	
22	
108	
75	
72	

6	143
6	858
624	
18	

Average of 101.00 b/d

660

1720	45
	660
	<hr/>
	705

Oct 8

6:25 - Observations begun

6:32 - Sooty Tern 16

6:33 - Bird sp? 1

6:37 - WT 1

7:05 - Bulwer's P 2

7:35 - Sooty Tern 12

Flying low and steady across bow

7:36 - Shearwater sp 2

7:40 - Shearwater sp. 1

Flying low above water - high below but back appeared lighter above than is true of WT.

8:04 - Ruddy Turnstone 1

8:15 - Shearwater sp? 1

Probably dark - dark head with white wing tips

8:25 - R-F Booby 1

Passing over by us

8:35 Tropic-birds 2

At long range

8:37 Petrel-Shearwater sp? 1

light above & below

8:40 Flock

15 ± ? birds

on horizon, well beyond limits of ident. range

8:45 Flock

Sooty Tern 15 ±

Actively feeding

At long range, closer than

Shearwaters sp? 7 ±

above; dark above & below

8:50 Shearwater sp? 1

dark above, dark below with light wing tips. Poss.

Soot-Shearwater -

8:50 Shearwater flock 13

Dark above, dark below
Dark w/ly - Possibly
C/S Shearwater

Oct. 8

9:55 Flock
 Sooty Tern 13±
 Shearwaters 8± - Prob. C.I.
 Tropic bird 1
 9:07 Shearwater -
 Petrel? Dark above, below
 dusky underneath

9:12 Flock
^{Common} Noddy +
 Sooty Tern 60
~~75~~±
 (Some 7 or 8 Noddies
 seen)
 Shearwaters 15±
~~20~~±
 RF Booby 1

9:32 Shearwaters 10
 9:36 " 1
 9:37 ROTTB 1
 Terns (hooded
 and/or noddy) 37

249
 27
 -76

9:40 Terns (hooded
 and/or noddy) 37
 9:43 Flock of terns 10± Out of range

(276) 9:50 Sooty Tern 27
 9:51 RF Booby 1
 9:52 Shearwater sp? 1
 9:56 Bulwer sp - 1
 9:59 Tern - Flock 50±5

dusk above + below

10:02 Shearwater sp? 1 Dusk above - taken

10:40 Hancock's St. Petrel 1

10:59 Shearwater sp 2

11:20 Petrel of Shearwater 1

11:21 Shearwater sp? 9±

11:22 " " 1

11:39 Sooty Terns 2

12:30 Pt. sp. 1

12:56 Shearwater sp 2

13:00 Shearwater sp? 2 Small & dark CI?

13:10	Shearwater sp. ? CI ?	1	fly low over very calm ocean into wind -
1312	" " ?	1	(353)
1315	School of Tuna -		
1320	Bird species - ?	1	at horizon
1340	Shearwater sp ?	1	
1345	" " CI ?	1	
1348	Pt. sp.	1	
1357	Shearwaters ? CI ?	12	} two loose groups of 6 // to ship (possibly a dispersing feeding flock)
	Sooty Tern	4	
1358	Hutton's S.P.	1	
1404	Sooty Tern	1	
1412	Shearwater	2	
1425	"	5	
1436	"	2	Christmas I. ?
1500	"	1	" "

Observations closed

Appendix

Hourly Positions During At Sea Observations

Date	Time	Latitude	Longitude	Date	Time	Latitude	Longitude
Oct 3	1200	21 10' N	158 00' W	Oct. 5	0900	13 53' N	164 15' W
	1300	20 55' N	158 00' W		1000	13 46' N	164 23' W
	1400	20 42' N	158 04' W		1100	13 38' 42' N	164 31' W
	1500	20 29' N	158 09' W		1200	13 27' N	164 36' W
	1600	20 16' N	158 02' W		1300	13 19' N	164 45' W
	1700	20 05' N	158 07' W		1400	13 11' N	164 52' W
	1800	19 45' N	158 25' W		1500	13 04' N	165 02' W
	1900	19 37' N	158 35' W		1600	12 55' N	165 10' W
	2000	19 29' N	158 43' W		1700	12 47' N	165 18' W
	2100	19 20' N	158 53' W		1800	12 39' N	165 27' W
	2200	19 10' N	159 02' W		1900	12 32' N	165 34' W
	2300	19 00' N	159 12' W		2000	12 27' N	165 41' W
Oct 4	0000	18 51' N	159 22' W	2100	12 19' N	165 49' W	
	0100	18 41' N	159 31' W	2200	12 11' N	165 57' W	
	0200	18 32' N	159 40' W	Oct. 6	2300	12 03' N	166 05' W
	0300	18 21' N	159 50' W		0000	11 55' N	166 18' W
	0400	18 12' N	160 00' W		0100	11 49' N	166 21' W
	0500	18 02' N	160 09' W		0200	11 40' N	166 28' W
	0600	17 53' N	160 19' W		0300	11 32' N	166 37' W
	0700	17 43' N	160 29' W		0400	11 24' N	166 44' W
	0800	17 31' N	160 34' W		0500	11 15' N	166 54' W
	0900	17 22' N	160 42' W		0600	11 07' N	167 03' W
	1000	17 13' N	160 53' W		0700	10 59' N	167 12' W
	1100	17 04' N	161 04' W		0800	10 45' N	167 25' W
	1200	16 54' N	161 11' W		0900	10 36' N	167 40' W
	1300	16 46' N	161 24' W		1000	10 29' N	167 48' W
	1400	16 35' N	161 31' W		1100	10 19' N	167 56' W
	1500	16 26' N	161 42' W		1200	10 13' N	168 03' W
	1600	16 16' N	161 52' W		1300	10 02' N	168 07' W
	1700	16 07' N	162 02' W		1400	9 53' N	168 11' W
1800	15 56' N	162 11' W	1500		9 45' N	168 20' W	
1900	15 42' N	162 29' W	1600		9 36' N	168 27' W	
2000	15 33' N	162 40' W	1700	9 28' N	168 34' W		
2100	15 21' N	162 47' W	1800	9 19' N	168 42' W		
2200	15 14' N	162 57' W	1900	9 16' N	168 52' W		
2300	15 05' N	163 06' W	2000	9 07' N	169 01' W		
Oct. 5	0000	15 00' N	163 09' W	2100	8 57' N	169 09' W	
	0100	14 57' N	163 14' W	2200	8 49' N	169 16' W	
	0200	14 49' N	163 23' W	2300	8 39' N	169 23' W	
	0300	14 40' N	163 31' W	Oct. 7	0000	8 30' N	169 31' W
	0400	14 32' N	163 40' W		0100	8 21' N	169 38' W
	0500	14 24' N	163 47' W		0200	8 12' N	169 45' W
	0600	14 16' N	163 55' W		0300	8 04' N	169 53' W
	0700	14 07' N	164 04' W		0400	7 54' N	170 01' W
0800	14 00' N	164 12' W	0500		7 45' N	170 08' W	

Observations of Oct. 8, 1963 - Continuation

0952	Shearwater sp.?	1	Dark above, below.
0956	Bird sp.?	1	
0959	<u>Flock</u>	50 * 5	Terns at long range.
1002	Shearwater sp.	1	Dark above, below.
1040	Harcourt's St. Petrel	1	
1059	Shearwater sp.?	2	
1120	Petrel or Shearwater	1	
1121	Shearwater sp.?	9 *	
1122	Shearwater sp.?	1	
1139	Sooty Tern	2	
1230	<u>Pt.</u> sp.	1	
1256	Shearwater sp.?	2	
1300	Shearwater sp.?	2	Small and dark, C.I. ?
1310	C.I. Sh. ?	1	
1312	C.I. Sh. ?	1	
1315			School of Tuna
1320	Bird sp.?	1	At horizon.
1340	Shearwater sp.?	1	
1345	Shearwater sp.? CI ?	1	
1348	<u>Pt.</u> sp.	1	
1357	Shearwater sp.? CI ?	12	Two loose groups of 6 parallel to ship.
	Sooty Tern	4	
1358	Harcourt's St. Petrel	1	1
1404	Sooty Tern	1	
1412	Shearwater sp.?	2	
1425	Shearwater sp.?	5	
1436	Shearwater sp.?	2.	Christmas I.?
1500	Shearwater sp.?	1.	Christmas I.? Observations concl.

Total : ³⁸⁴~~325~~ Birds.
 10 Flocks
 355 Minutes Observation Time.

119 miles



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



Pacific Ocean, 1 day out of Oahu, Hawaiian Islands.

Observers 1st watch : Clapp, Sibley, Huber

2nd watch : Clapp, Huber.

1045			Left harbour
1106	Frigatebird	1	
1107	Frigatebird	1	
1111	Anous sp?	1	dark above, below, steady tern like flight
1114	Frigatebird	2	
1114	Wedgetail	1	
1118	Wedgetail	1	
	RF Booby	1	white tail
1122	Wedgetail	1	
1123	Frigatebird	1	
1145	Frigatebird	1	
1208	Bird sp?	1	glimpsed too briefly for identification. Possibly had a white rump.
1230			observations concluded.
1620			observations begun.
1620	Brown Booby	1	
1630	Wedgetail	1	✓
1631	Bonin Petrel	1	✓
1631	Wedgetail	1	✓
1637	Bird sp? WT?	3	✓
1641	Bird sp?		
1645	Bonin Petrel	1	✓
1646	Pterodroma sp?	1	✓
1655	Bulwers?	1	✓
	Bird sp?	1	about same size as above, suggested Bonin very fast wing beat.
1659	? Bird ?	1	either a dark phase WT or a Christmas Is. S.
1700	Bird sp.	1	
1707	Bird sp.	2	
1808	Bonin Petrel	1	✓
1744	Wedgetail	1	
1749	Wedgetail	1	dark phase
1756	Wedgetail	2	
1802	Wedgetail	1	
1812	Wedgetail	1	
1818	RF Booby	1	
1820			observations concluded. Between 4 and quarter after 4, 2 WT Tropic birds were seen.
	Total	36 birds	
		0 flocks.	
	Observation time	225 minutes.	



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



Pacific Ocean, 2 days out of Oahu, Hawaiian Islands.

Observers : Clapp, Brattley, Huber.

0725	*WT*Tropic Bird*****		Observations begun
0832	WT Tropic Bird	1	
0855	Wedgetail	1	
0856	Bonin Petrel	3	
	Shearwater sp?	1	Large, heavy bodied, dark above and below Took off from water, 3 Bonins a compact group.
0915	Bonin Petrel	1	At edge of rain squall.
0920	Bird sp.?	1	Not seen well. D.A.B.
1022	Storm petrel sp?	1	Very small, very rapid wing beat. Possibly Sooty Storm Petrel.
1057	<u>Flock</u>		
	Sooty Tern	1	One Pt. type seen well had typical gray back pattern- Pure white wing linings.
	<u>Anous stolidus</u>	1	
	<u>Pterodroma sp?</u>	8 *	Larger than Bonin, lighter rump. Most probably <u>Pt. externa</u> .
1211	Bonin Petrel	1	Well seen.
1248	W.T. Tropic Bird	1	
1252	<u>Flock</u>		
	Sooty Tern	20 *	
	Shearwaters and Petrels	15 *	DAB.
1255	Wedgetail	1	
1305	<u>Pterodroma sp.</u>	2	
1318	W.T. Tropic Bird	1	
	Frigate bird	1	
	Sooty Tern	5	
1405	Wedgetail ?	1	
1416	W.T. Tropic Bird	1	
1420	Bonin Petrel ?	1	
1433	Wedgetail ?	2	
1438	Bonin Petrel ?	2	
1444	Bonin Petrel ?	1	Shoat at on water.
1618	<u>Pterodroma sp.?</u>	1	
1630	Observations concluded.		

Totals 75
~~85~~ birds
2 mixed flocks.
545 minutes observation time.



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



At Sea Observations - U.S.S. Tawakoni - Raw Data - Oct. 5, 1963

Pacific Ocean, 3 days out of Oahu, Hawaiian Islands.

Observers: Sibley, Clapp, Bratley, Huber

0710			Observations begun
0725	<u>Flock</u>		
	Sooty Terns	85 * 5	Flying generally NE
0733	Ruddy Turnstone	1	
0802	Ruddy Turnstone	1	
0815	Petrel-Shearwater?	1	
0832	Wedgetail ??	1	
0915	<u>Pt. species</u>	1	
0943	<u>Pt. species</u>	1	
	Wedgetail	1	Dark Phase
0947	R.T. Tropic Bird	1	
0955	<u>Pt. sp.</u>	1	Too large for Bonin
1032	Golden Plover	1	Chirpping
1125	<u>Pt. sp.</u>	1	
1132	<u>Pt. sp.</u>	1	
1134	<u>Pt. sp.</u>	2	
1222	<u>Pt. sp.</u>	1	White breast, dusky thru eye and cap of head, white neck, dark brown on upper wing with light streak, light across rump.
1450	<u>Pt. sp.</u>	1	
1520	R.F. Booby	1	imm.
1526	R.F. Booby	1	imm. sitting on water.
1605	Masked Booby	1	imm.
1621	<u>Pt. sp.</u>	1	
1657	<u>Pt. sp.</u>	1	
1704	<u>Pt. sp.</u>	1	
1755			observations concluded.

Total 107 birds
 1 flock (not mixed)
 645 minutes observation time.



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



At Sea Observations - U.S.S. Tawakoni - Raw Data - Oct. 6, 1963

Pacific Ocean 4 days out of Oahu, Hawaiian Islands.

Observers: Sibley, Clapp, Bratley, Huber.

0630			Observations begun
0630	R.F. Booby	2	
0635	R.F. Booby	1	
0640	R.F. Booby	2	
0715	Shearwater or petrel	1	
0722	" "	1	
0750	<u>Flock</u>		
	Sooty Tern	20 *	
	Sh.-petrels	7-8	Two sizes
0754	R.F. Booby	1	
0800	Pt. sp	1	
0807	Pt. sp	1	
0808	Wedgetail	2	Initially sitting on water
0815	Wedgetail	2	
0830	Pt. sp.	1	
0855	R.F. Booby	1	
0910	Pt. sp.	1	
0923	Pt. sp.	1	
0924	Pt. sp.	1	
1007	Tern sp.?	1	
1018	Pt. sp.	1	
1056	Bonin Petrel	1	
1236	Sooty Tern	5 *	
1410	Pt. sp.	1	
1441	Shearwater sp?	2	Dark above, below, heavy bodied. C.I. ?
1502	Bulwers P.	1	
1503	Pt. sp.	1	
1520	Bird sp.?	1	
1540	Sooty Shearwater	1	Seen well, R.B.C., F.C.S.
1625	Shearwater sp.?	2	
1720			Observations concluded.
1800	Red-f. Booby	2	Observations begun. Both collected (DAB. FCS)
1840	Red-f. Booby	1	Observations concluded.

Total 67 birds.
 1 mixed flock
 690 minutes observations time.



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



At Sea Observations - U.S.S. Tawakoni - Raw Data - Oct. 7, 1963

Pacific Ocean 5 days out of Oahu, Hawaiian Islands.

Observers: Sibley, Clapp, Bratley, Huber.

0620			Observations begun
0639	Bird sp.	1	
0648	Shearwater sp.?	1	Dark above, below, at very long range.
0742	Pt. sp. Bird sp.?	2	All dark
0800	<u>Pt.</u> sp.	1	All white under wing linings, all white beneath, dusky brown above with black wing tips.
0807	<u>Pt.</u> sp.	1	
0832	Bird sp.	1	
0847	Bird sp.	1	
0848	<u>Pt.</u> sp.	1	With dark edges to underwings
0858	Bird sp.	1	
0900	Shearwater sp.	1	Dark above, below.
0902	<u>Pt.</u> sp.	1	
0907	Above bird shot floating on water by Sibley and Bratley.		
0915	<u>Pt.</u> sp.	2	
0925	Wedgetail	1	
0940	W.T. Tropic bird	1	
0959	<u>Pt.</u> sp.	1	
1022	<u>Puffinus</u> sp.	4	3 dark, 1 light, sitting on water.
1025	Ruddy Turnstone	1	shot (Bratley)
1107	Bulwer's Petrel	1	
1123	Shearwater sp?	1	all dark
1136	Shearwater sp?	1	all dark
1253	Bulwer's Petrel	1	
	Sooty Tern	1	
1330	Shearwater sp.?	1	all dark
1335	Bulwer's Petrel	1	
1456	Shearwater sp.?	2	
1514	Wedgetail ?	1	
1515	Sooty Tern (<u>Flock</u>)	15 *	
	Wedgetail	10 *	
1530	Bird sp.?	2	
1531	Bonin Island P.?	1	
1545	<u>Flock</u>		
	Sooty Tern	125 *	
	Petrels	15 *	several species.
1555	Petrel sp?	1	
1600	Tropicbird sp.?	1	
1602	Shearwater sp.?	1	
1608	C.I. Shearwater	1	ident. by FCS
1622	Shearwater sp.?	3	
	<u>Pterodroma</u> sp.	1	
1625	Shearwater sp.	1	
1632	W.T. Tropic Bird	2	
1647	C.I. Shearwater	2	ident. F.C.S.
1708	<u>Pt.</u> sp.	1	
1712	Bird sp.?	1	
1715	<u>Pt.</u> sp.	1	
1732	Bonin Petrel	1	



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



Observations of Oct. 7, 1963 - Concluded

1737	Pt. sp.	1	
1742	Shearwater sp.?	1	
1755	C.I. Shearwater	1	
1803	Ruddy Turnstone	1	Collected (LH)
1805			Observations concluded.

Subsequently after dark, a Red footed Booby was collected (RBC)

Total	222	Birds
	2	Mixed Flocks.
	705	Minutes Observation Time



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



At Sea Observations - U.S.S. Tawakoni - Raw Data - Oct. 8, 1963

Pacific Ocean 6 days out of Oahu, Hawaiian Islands.

Observers: Sibley, Clapp, Bratley, Huber.

0625			Observations begun.
0632	<u>Flock</u>		
	Sooty Terns	16	
0633	Bird sp.?	1	
0637	Wedgetail	1	
0705	Bulwer's Petrel	2	
0735	Sooty Tern	12	Flying low and steadily across bow.
0736	Shearwater sp.?	2	
0740	Shearwater sp.?	1	Light below but back appeared lighter than is true of W.T.
0804	Ruddy Turnstone	1	
0815	Shearwater sp.?	1	Possibly Sooty - dark bird with white silvery wing linings.
0825	Red-footed Booby	1	
0835	Tropic birds	2	At long range.
0837	Pet. Shearwater sp.?	1	Light above and white below.
0840	<u>Flock</u>	15 *	On horizon, well beyond limits of range of identification.
0845	<u>Flock</u>		
	Sooty Tern	15 <u>6</u>	At long range, closer than above, actively feeding,
	Shearwater sp.?	7 *	Dark above and below.
0850	Shearwater sp.?	1	Dark above, below. with light wing linings. Poss. Sooty Shearwater
0850	<u>Flock</u>		
	Shearwater	13	Dark above, dark below, dark wing linings. Possibly C.I.
0855.	<u>Flock</u>		
	Sooty Tern	13 *	
	Shearwaters	8 *'	Prob. C.I.
	Tropicbird	1	
0907	Shearwater sp.?	1	Dark above, below.
	Petrel sp?	1	Dark above, below, size of Bulwer's, with a white rump. Prob. <u>castro</u>
	(<u>Oceanodroma</u>)		
0912	<u>Flock</u>		
	<u>Anous stolidus</u>	8 *	
	Sooty Tern	50 *'	
	Shearwaters	15 *	
	R.F. Booby	1	
0932	Shearwaters	10	
0936	Shearwater sp.?	1	
0937	R.T. Tropic Bird	1	
0940	Terns species	37	Sooties and/or noddies.
	<u>Flock</u>		
0943	<u>Flock</u>	10 *	Terns out of range of identification
0950	<u>Flock</u>		
	Sooty Tern	27	
0951	Red F. Booby	1.	



USS TAWAKONI (ATF 114)
PEARL HARBOR
HAWAII



November 22, 1963

7:00			Start watch
7:10	Pterodroma sp?	1	
7:15	Pterodroma sp?	1	
7:31	Pterodroma sp?	1	
7:42	White-tailed Tropicbird	1	(6)
7:44	Pterodroma sp.	1	
7:56	Pterodroma sp.	1	
8:03	Pterodroma sp.	1	
8:37	Pterodroma sp.	1	
9:49	A white rumped storm petrel with wings like the Bulwers	1	
10:00	Sooty Terns	20 ⁺	following storm one had a brown head and the brown faded out on the breast behind the wings. Brown wings - white along front of wings, brown underneath
10:04	A white rumped storm petrel	1	
10:30	Bulwer's Petrel	1	
11:15	A white rumped storm petrel	1	
11:46	Christmas Island Shearwater	1	
2:02			Quite very disgusted
5:12			Started again
5:33	Pterodroma	1	
5:48	Harcourt's Storm Petrel	1	
6:00			Quit <i>460 minutes</i>

November 23

7:20		1	Start watch
7:22	Pterod sp.	1	
7:22	Red-footed Booby	1	Red-footed Booby ?
7:36	Pterod sp.	1	
7:42	Pterod sp.	1	
7:48	Red-footed Booby	1	
8:00	W. T. Tropicbird	1	
8:10	Puffinus sp?	2	
8:20	Red-cooted Boobies	3	
8:58	Phoenix Is. Petrel	1	
9:55	Wedge-tailed Shearwater	1	
9:58	Bonin Is. Petrel		
10:22	Puffinus sp?	3	
	Wedge-tail		
10:40	Pterod	1	
10:46	Red-tailed Tropic- bird	1	

November 23 continued

11:15	Shearwater (large dark)	1	
11:28	Wedge-tailed Shearwater	2	(one on water)
	Harcourt's Petrel	1	
	Pterodroma (Bonin Is?)	1	
11:36	Wedge-tailed Shearwater	2	
11:44	Red-footed Booby	2	
11:45	Red-footed Booby	1	
11:46	Bonin Island Petrel	1	
12:20			quit
3:00 p.m.			Start
3:08	Pterodroma	1	
3:21	Shearwater sp.	1	White underneath; dark on top
3:55	Pterodroma	1	
3:58	Red-tailed Tropicbird	1	
4:07	Wedge-tailed Shearwater	40+	
	Sooty Tern	10	
F	Bonin Island Petrel	2	
	Tropicbird	1	
4:10	Bulwer's Petrel	1	
	Christmas Island	1	
4:14	Shearwater	1	Dark above white below
4:22	Pterodroma	1	
4:40	Wedge-tailed Shearwater	12	
F	Pterodroma	1	
4:48	Pterodroma	1	
5:02	Harcourts S. rt.	1	
5:10	Christmas Island	1	
5:40	Wedge-tailed Shearwater	1	

November 24

8:00	Large pterodroma	1	Start watch - dark rump ?
8:25	Pterodroma	2	
9:03	White necked	1	
10:09	Harcourt's Storm Petrel	1	
10:10	Red-tailed Tropicbird	1	
10:40	Shearwater	6	
	Sooty Tern	1	
12:10	Red-tailed Tropicbird	2	
12:20	Pterodroma	1	
1:15	Booby	1	
1:17	Shearwater sp?	1	Black above, white below
1:45	Pterodroma sp?	1	
1:46			Quit
3:30			Start
3:50	Wedge-tailed Shearwater	1	
5:30			Quit

November 25

8:00				Start
8:10	Wedge-tailed Shearwater	2		
8:40	Wedge-tailed Shearwater	1		
9:05	Wedge-tailed Shearwater	1		
9:30	Wedge-tailed Shearwater	1		
9:50	Wedge-tailed Shearwater			
11:15	Wedge-tailed Shearwater	2		
11:43	Sooty Tern	1		
11:55	Wedge-tailed Shearwater	1		
12:10				Quit
2:10				Watch Started
3:30	Wedge-tailed Shearwater	1		
3:45	Wedge-tailed Shearwater	1		
3:52	Wedge-tailed Shearwater	2		
3:52	Sooty Tern	2		
4:00	Wedge-tailed Shearwater	1		
4:45	Wedge-tailed Shearwater	1		
5:00				Quit

November 26

7:30				Start
7:30	Fairy Tern	1		
	Wedge-tailed Shearwater	2		
7:35	Wedge-tailed Shearwater	1		
7:43	Large Pterodroma	1		
7:45	Shearwater sp ?	1		
7:50	Shearwater sp ?	1		
8:05	Fairy Tern	2		
8:07	Wedge-tailed Shearwater	1		
8:10	Wedge-tailed Shearwater	1		
8:11	Wedge-tailed Shearwater	2		
8:28	Wedge-tailed Shearwater	1		
8:50	Fairy Tern	1		
9:05	Wedge-tailed Shearwater	2		
9:40	Wedge-tailed Shearwater	2		
9:46	Wedge-tailed Shearwater	1		
9:52	Wedge-tailed Shearwater	1		
10:14	Red-footed Booby	1		
10:39	Red-footed Booby	1		
11:55				Quit

Nov. 22, 1963

- 7:00 start watch
7:10 1 Pterodroma sp?
7:15 1 " "
7:31 1 " "
(6) 7:42 1 White-T Tropic bird
7:44 1 Pterodroma sp.
7:56 1 " "
8:03 1 "
8:37 1 " "
9:37 1 Pterodroma sp.?
9:49 1 A white rumped storm petrel with wings like the Bulwers
10:00 20⁺ Sooty terns following rain ~~storm~~ storm one had a brown head and the brown faded out on the breast ~~and~~ behind the wings. - brown wings - white along front of wings, brown underneath
10:04 1. A white rumped storm petrel
10:30 1 Bulwers petrel
11:15 1 A white rumped storm petrel
11:46 1 Christmas Island Shearwater
~~11:00~~ 1

Nov 22

~~12:11 - start watch~~

2:02

quit very disgusted

5:12

started again

5:33

Pterodroma

5:48

HAR^{courts.} storm petrel

6:00

quit

Permit No.

Banding Schedule
3-860 (rev. 1961)

Bander

Incl. Band Nos.
thru

-Banding Locations-
A ----- C
B Nov-23 D

Band Prefix:		Common Name	AOU #	S	Age-Sex	F	State Prov.	Lat-Long	Loc	Date
	01									
7:20	02	1								
	03									
7:22	04	1								
	05									
	06	1 Red-footed Booby								
	07									
7:36	08	1								
	09									
7:42	10	1								
	11									
7:48	12	1 Red-footed Booby								
	13									
8:00	14	1 W.-T Tropic bird								
	15									
8:10	16	2 Puffins sp?								
	17									
8:20	18	3 Red-footed Boobies								
	19									
8:58	20	1 Phoenix Is. Petrel								
	21									
9:55	22	Wedge-tailed Shearwater								
	23									
9:58	24	Bonin Is. Petrel								
	25									
10:22	26	3 Puffinus sp? Wedge-tail								
	27									
10:40	28	1 Pter								
	29									
10:46	30	1 R.T. Tropic bird								
	31									
11:15	32	1 Shearwater (large dark)								
	33									
11:28	34	2 W.T. Shearwater (from water)								
	35									
	36	1. Harcourt's S. Petrel.								
	37									
	38	1. Pterodroma (Bonin Is?)								
	39									
11:36	40	2 W.T. Shearwaters								
	41									
11:44	42	2 red footed booby								
	43									
11:45	44	1 Red F. booby								
	45									
11:46	46	1. Bonin Is.								
	47									
12:20	48	quit								
	49									
	50	over								

Permit No.

Banding Schedule
3-860 (rev. 1961)

Bander

thru

Incl. Band Nos.

-Banding Locations-

A

Nov. 24

C

B

D

Band Prefix:	Common Name	AOU #	S	Age-Sex	F	State Prov.	Lat-Long	Loc	Date
8:00 01	start watch								
02	large Pterod. dark wings?								
8:25 03	2 pter.								
04									
9:03 05	white								
06	mechad								
10:09 07	Heron to stem Petrel								
08									
10:10 09	Red-tailed T Bird								
10									
10:40 11	6 sk. nupter								
12	1 sooty tern								
12:10 13	2 Red-tails								
14									
12:20 15	1 Pterodroma								
16									
17									
1:15 18	1 booby sp?								
1:17 19	1 shearwater sp? black above white below								
20									
1:45 21	Pterodroma sp?								
22									
1:46 23	quit								
24									
3:30 25	START								
26									
27									
3:50 28	1 W.T.S.								
29									
5:30 30	quit								
31									
32									
33									
34									
35									
36									
37									
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41									
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46									
47									
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50									

Band Prefix:	Common Name	AOU #	S	Age-Sex	F	State Prov.	Lat-Long	Loc	Date
51									
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Remarks _____

Permit No.

Banding Schedule
3-860 (rev. 1961)

Bander

Incl. Band Nos.
thru

Nov 25

-Banding Locations-
A ----- C
B ----- D

Band Prefix:	Common Name	AOU #	S	Age-Sex	F	State Prov.	Lat-Long	Loc	Date
8:00 01	stunt								
8:10 02									
8:10 03	2 Wedgetails								
8:40 04									
8:40 05	1 Wedgetails								
8:40 06									
9:05 07	1 Wedgetails								
9:05 08									
9:30 09	"								
9:30 10									
9:50 11	"								
9:50 12									
11:15 13	"								
11:15 14	2 "								
11:43 15									
11:43 16	1 sooty Tern								
11:55 17									
11:55 18	1 W.T.S.								
12:10 19	grat								
12:10 20									
2:10 21	watch started								
2:10 22									
3:30 23	1 wedgetail								
3:30 24									
3:45 25	1 "								
3:45 26									
3:52 27	2 "								
3:52 28									
" 29	2 sooty Terns								
" 30									
4:00 31	1 Wedge-tail								
4:00 32									
4:45 33	1 W.T.S.								
4:45 34									
5:00 35									
5:00 36	grat								
5:00 37									
5:00 38									
5:00 39									
5:00 40									
5:00 41									
5:00 42									
5:00 43									
5:00 44									
5:00 45									
5:00 46									
5:00 47									
5:00 48									
5:00 49									
5:00 50									

Band Prefix:	Common Name	AOU #	S	Age-Sex	F	State Prov.	Lat-Long	Loc	Date
51									
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Remarks _____

Permit No.

Banding Schedule
3-860 (rev. 1961)

Bander

thru

Incl. Band Nos.

-Banding Locations-

A

Nov. 26

C

B

D

Band Prefix:		Common Name	AOU #	S	Age-Sex	F	State Prov.	Lat-Long	Loc	Date
7:30	01	start								
	02									
"	03	1 fairy tern								
	04	2 wedgetail								
7:35	05	1 wedgetail								
	06									
7:43	07	large Pterodroma								
	08									
7:45	09	Shearwater sp?								
	10									
7:50	11	"								
	12									
8:05	13	2 fairy								
	14									
8:07	15	Wedgetail								
	16									
8:10	17	"								
	18									
8:11	19	2 "								
	20									
8:28	21	1 wedgetail								
	22									
8:50	23	5 fairy								
	24									
9:05	25	2 Wedge-tails								
	26									
9:40	27	2 " "								
	28									
9:46	29	1 " "								
	30									
9:52	31	1 " "								
	32									
10:14	33	1 Red-footed								
	34									
10:39	35	"								
	36									
11:55	37	quit								
	38									
	39									
	40									
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									

Time Date	LATITUDE	LONGITUDE
Nov 21 0200	3° 03' S	171° 21' W
0300	2° 58'	171° 29' W
0400	2° 55'	171° 35'
0500	2° 50'	171° 38'
0600	2° 48'	171° 44'
0700	2° 38'	171° 46'
0800	2° 27'	171° 38'
0900	2° 15'	171° 30'
1000	2° 13'	171° 25'
1100	1° 49'	171° 17'
1200	1° 37'	171° 09'
1300	1° 32'	171° 07'
1400	1° 24'	171° 00'
1500	1° 11'	170° 53'
1600	0° 59'	170° 45'
1700	0° 46'	170° 37'
1800	0° 34'	170° 30'
1900	0° 22'	170° 22'
2000	0° 03' S	170° 05'
2100	1° 50' N	169° 59'
2200	1° 37' N	169° 51'
2300	1° 26'	169° 44'
2400	0° 46' N	169° 37'
Nov 22 0100	1° 04'	169° 30'
0200	1° 12'	169° 22'
0300	1° 25'	169° 14'
0400	1° 38'	169° 06'
0500	1° 50'	168° 58'
0600	2° 02'	168° 48'
0700	2° 15'	168° 44'
0800	2° 28'	168° 38'
0900	2° 32'	168° 36'
1000	2° 44'	168° 28'
1100	2° 57'	168° 20'
1200	3° 10'	168° 14'
1300	3° 14'	168° 07'
1400	3° 25'	168° 00'
1500	3° 38'	167° 53'
1600	3° 49'	167° 45'
1700	4° 02'	167° 38'
1800	4° 15'	167° 30'
1900	4° 26'	167° 24'
2000	4° 53'	167° 17'
2100	5° 03'	167° 09'
2200	5° 13'	167° 03'
2300	5° 23'	166° 53'
2400	5° 34'	166° 46'
Nov 23 0100	5° 45'	166° 38'
0200	5° 55'	166° 30'
0300	6° 06'	166° 22'
0400	6° 16'	166° 15'
0500	6° 26'	166° 07'
0600	6° 37'	165° 58'
0700	6° 48'	165° 50'
0800	6° 58'	165° 43'
0900	7° 08'	165° 35'
1000	7° 19'	165° 27'
1100	7° 30'	165° 19'
1200	7° 39'	165° 11'
	7° 55'	165° 06'
		164° 58'

Time	LATITUDE	LONGITUDE
Nov 22 2100	9° 27' N	164° 03' W
2200	9° 39'	163° 54'
2300	9° 51'	163° 51'
2400	10° 03'	163° 45'
Nov 24 0100	10° 15'	163° 39'
0200	10° 27'	163° 33'
0300	10° 39'	163° 28'
0400	10° 52'	163° 22'
0500	11° 04'	163° 17'
0600	11° 14'	163° 19'
0700	11° 25'	163° 14'
0800	11° 36'	163° 08'
0900	11° 48'	163° 03'
1000	12° 00'	162° 58'
1100	12° 12'	162° 56'
1200	12° 18'	162° 50'
1300	12° 27'	162° 42'
1400	12° 39'	162° 36'
1500	12° 51'	162° 29'
1600	13° 03'	162° 21'
1700	13° 13'	162° 22'
1800	13° 23'	162° 13'
1900	13° 24'	162° 05'
2000	13° 49'	161° 56'
2100	13° 59'	161° 48'
2200	14° 10'	161° 41'
2300	14° 21'	161° 33'
2400	14° 31'	161° 26'
Nov 25 0100	14° 42'	161° 17'
0200	14° 53'	161° 10'
0300	15° 04'	161° 03'
0400	15° 14'	160° 56'
0500	15° 25'	160° 47'
0600	15° 36'	160° 39'
0700	15° 41'	160° 31'
0800	15° 54'	160° 40'
0900	16° 06'	160° 33'
1000	16° 17'	160° 26'
1100	16° 29'	160° 19'
1200	16° 39'	160° 16'
1300	16° 50'	160° 10'
1400	17° 02'	160° 03'
1500	17° 13'	159° 55'
1600	17° 23'	159° 48'
1700	17° 32'	159° 41'
1800	17° 41'	159° 31'
1900	17° 52'	159° 23'
2000	18° 04'	159° 16'
2100	18° 14'	159° 10'
2200	18° 25'	159° 04'
2300	18° 36'	158° 58'
2400	18° 47'	158° 51'
Nov 26 0100	18° 58'	158° 48'
0200	19° 03'	158° 44'
0300	19° 09'	158° 40'
0400	19° 19'	158° 33'
0500	19° 30'	158° 27'
0600	19° 36'	158° 20'
0700	19° 51'	158° 14'
		158° 10'
		158° 09'
		158° 04'

M+S
SHA
SHA*
SHA*
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DEC

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INTER.

Az

NOTE:

when aL is N	AND T IS W,	SUBTRACT Az FROM 360
" aL is S	AND T IS W,	ADD 180 TO Az
" " " N	" " " E,	USE Az DIRECTLY
" " " S	" " " E,	SUBTRACT Az FROM 180